

RVSB Transmitter (initial concept)

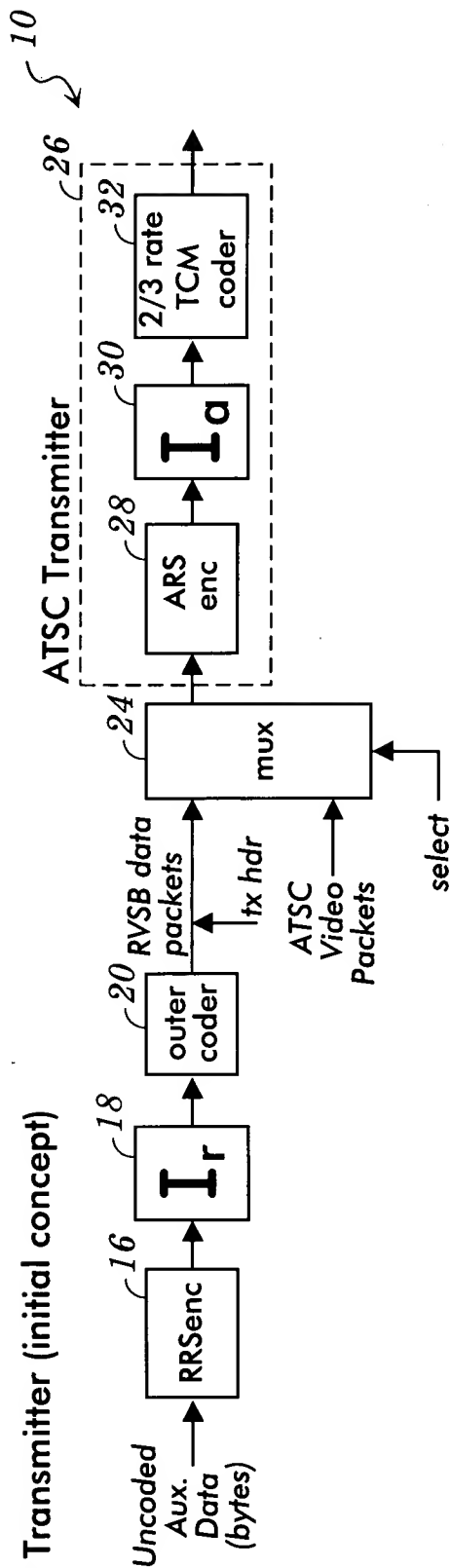


Figure 1

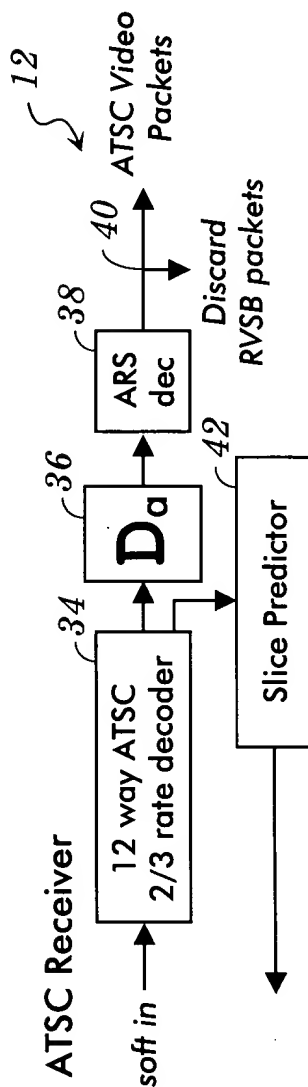


Figure 2

| mapper function | | | | level |
|-----------------|----|----|---|-------|
| Z2 | Z1 | Z0 | | |
| 0 | 0 | 0 | 0 | -7 |
| 0 | 0 | 1 | 1 | -5 |
| 0 | 1 | 0 | 0 | -3 |
| 0 | 1 | 1 | 1 | -1 |
| 1 | 0 | 0 | 0 | +1 |
| 1 | 0 | 1 | 1 | +3 |
| 1 | 1 | 0 | 0 | +5 |
| 1 | 1 | 1 | 1 | +7 |

Figure 5

RVSB Receiver

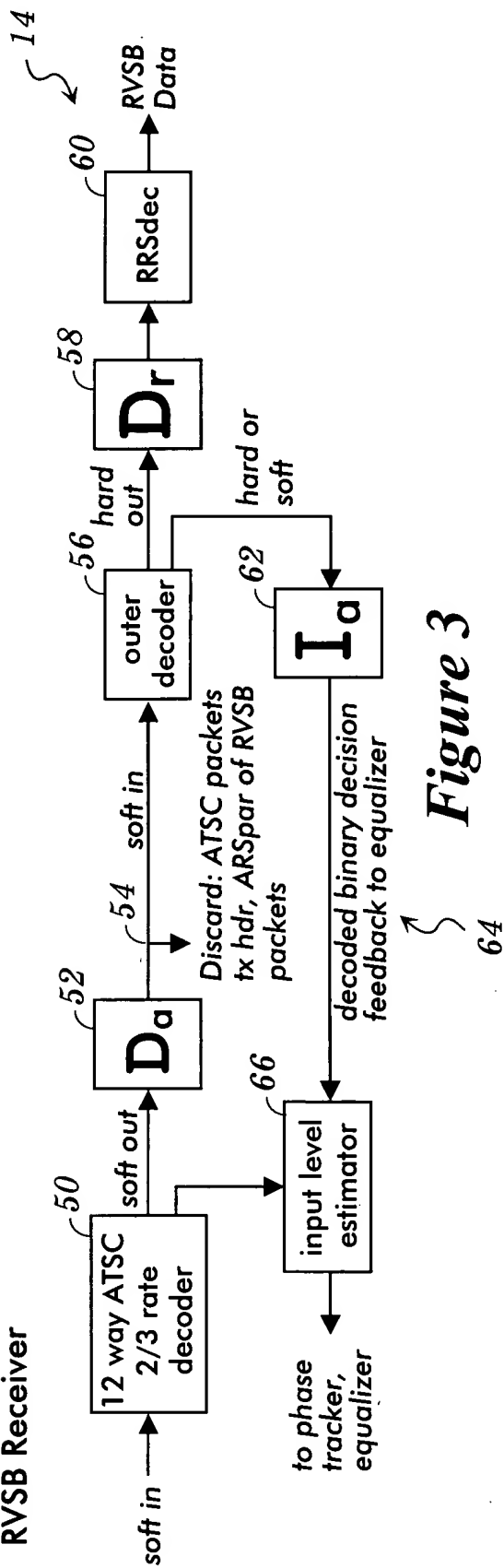


Figure 3

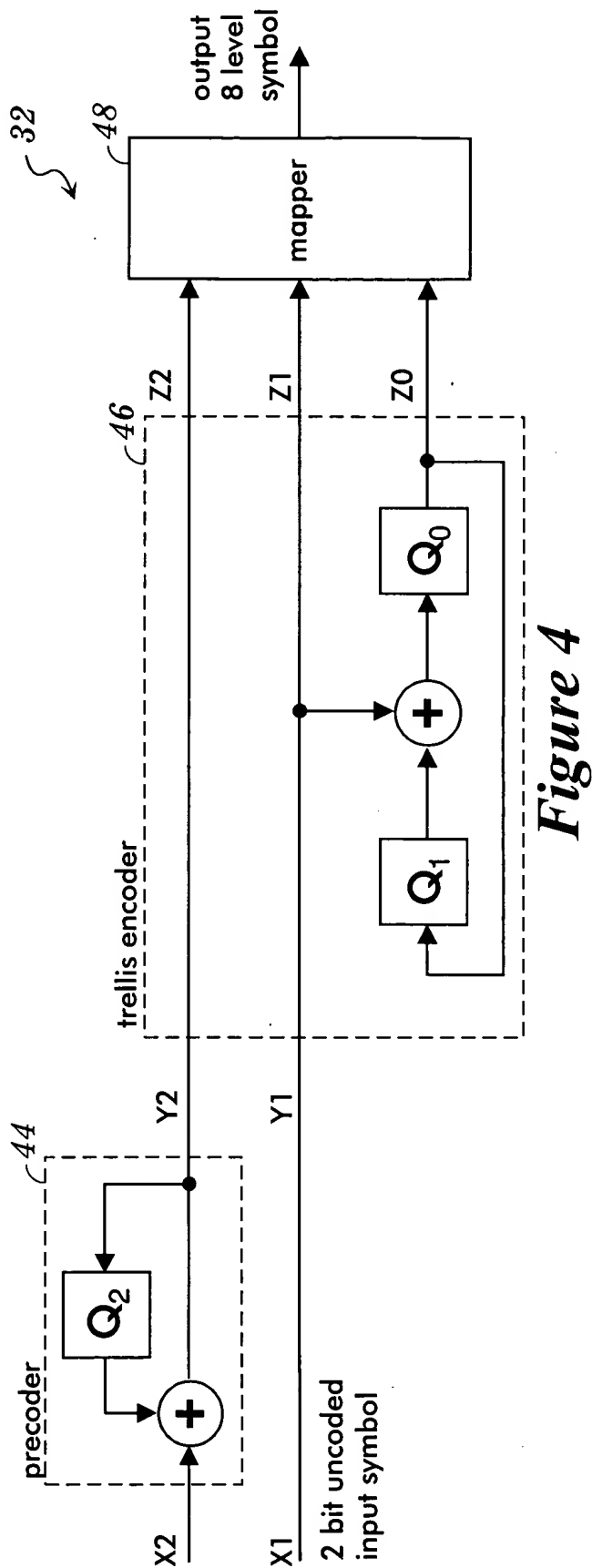


Figure 4

branch label :
 X_2X_1 / mapped output level

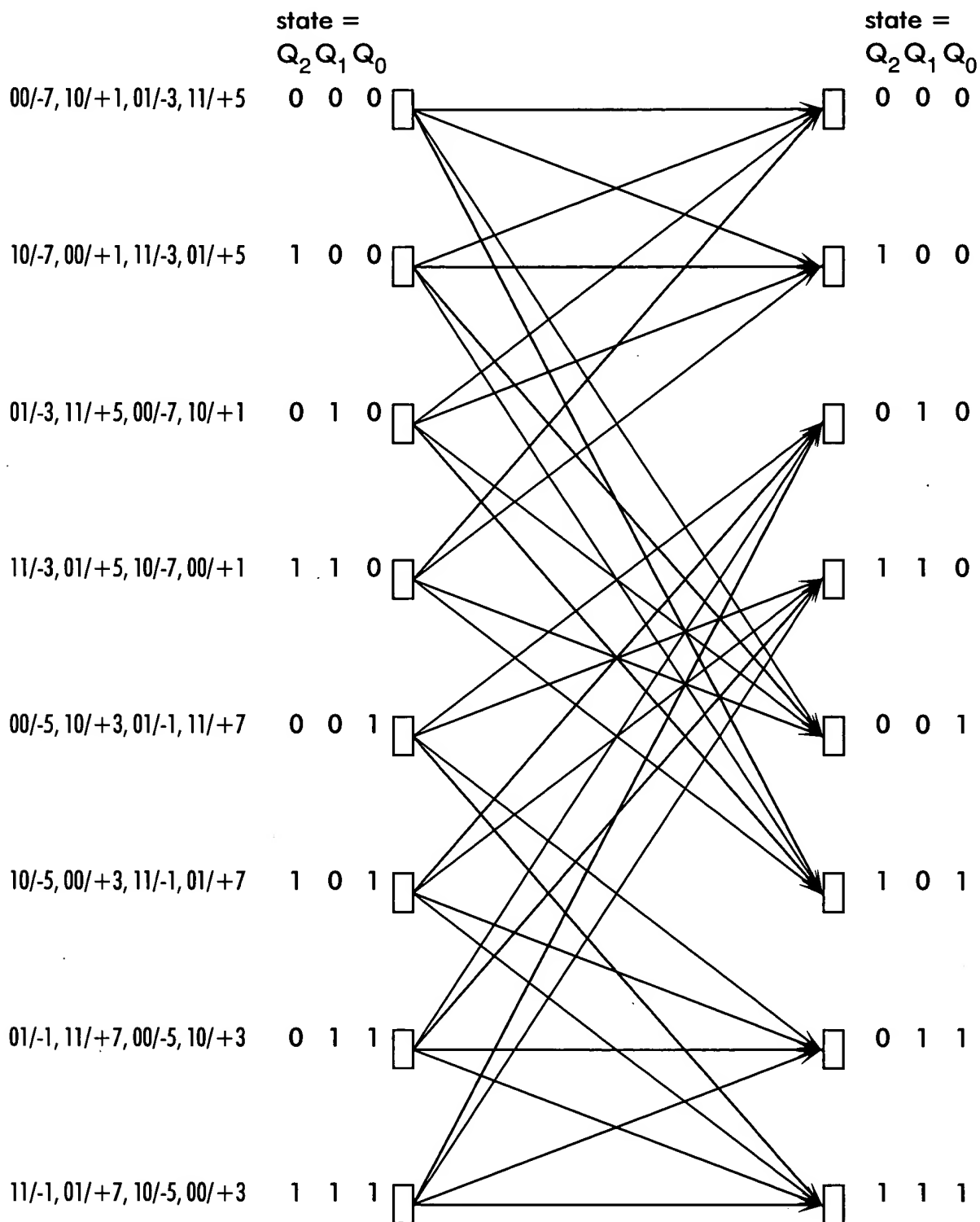


Figure 6

0904262-034304

RVSB Transmitter

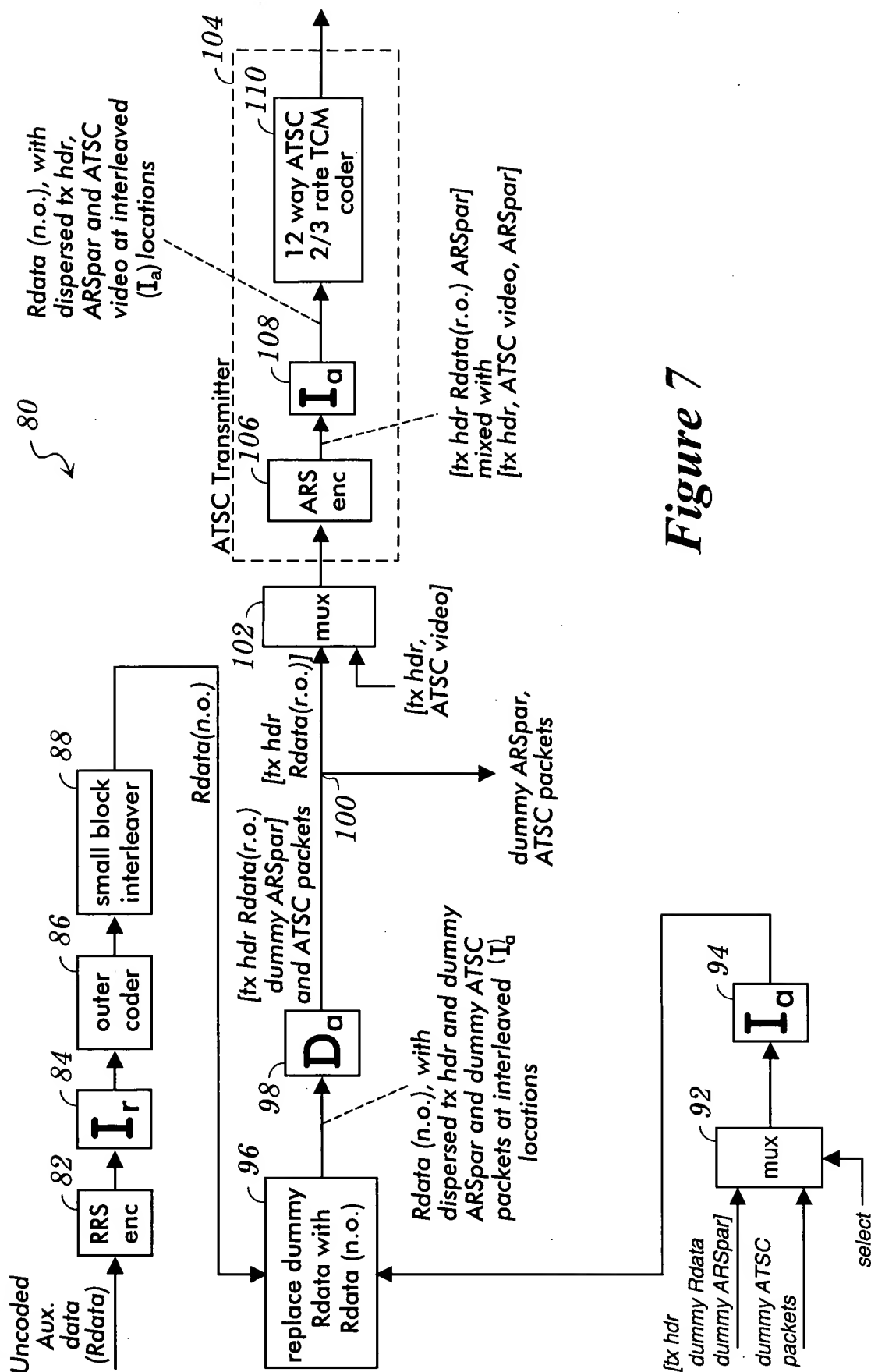


Figure 7

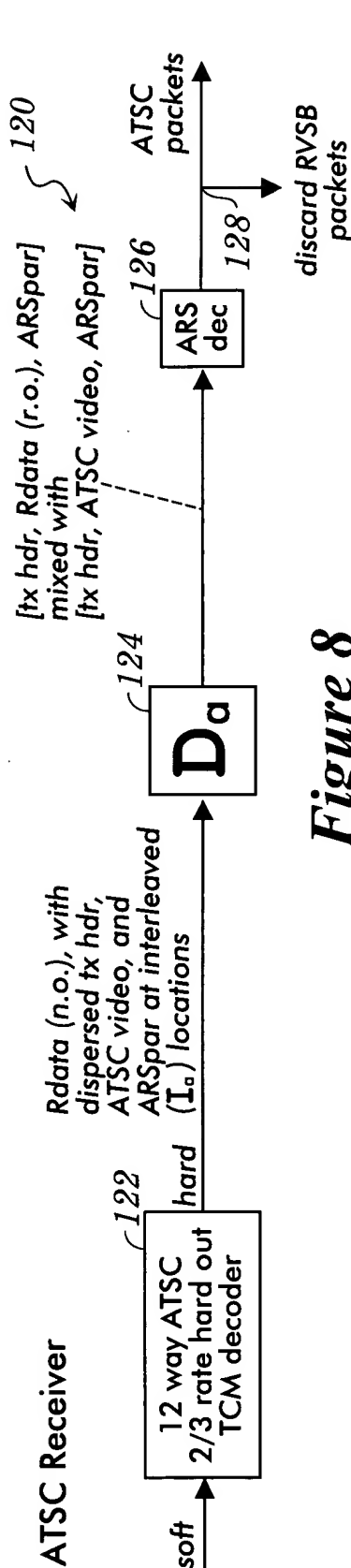


Figure 8

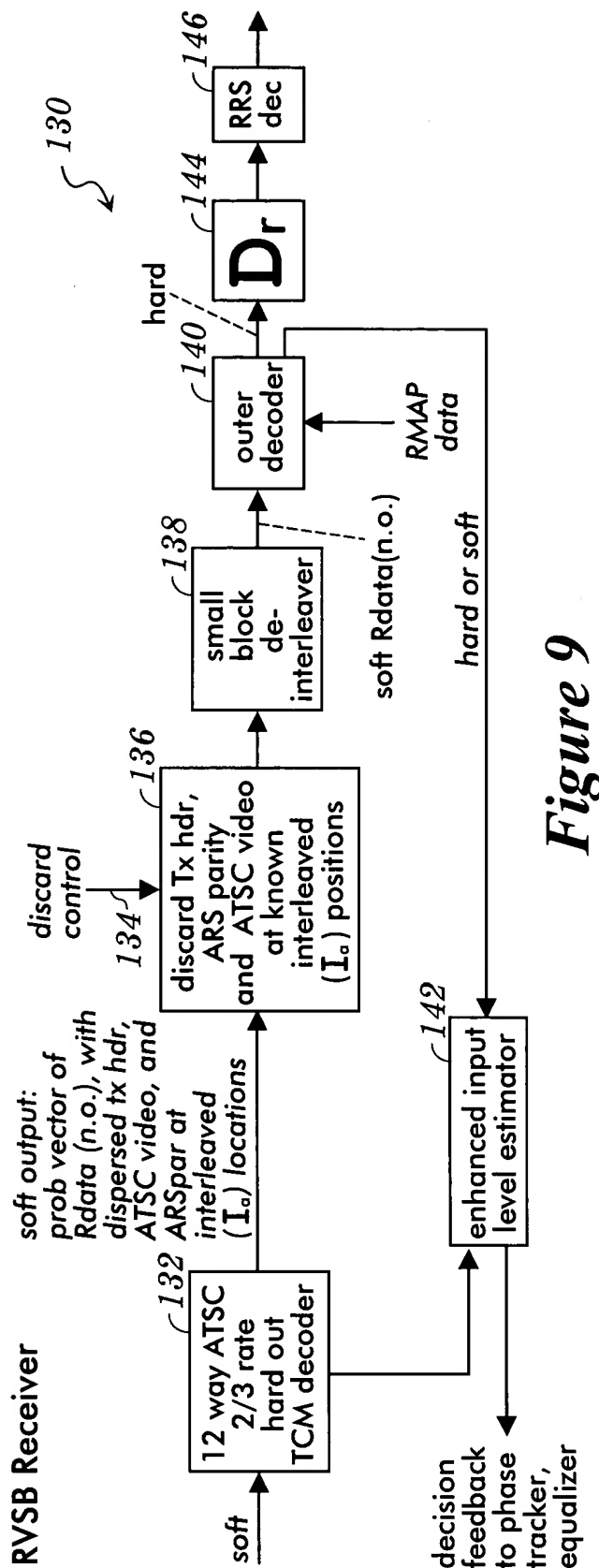


Figure 9

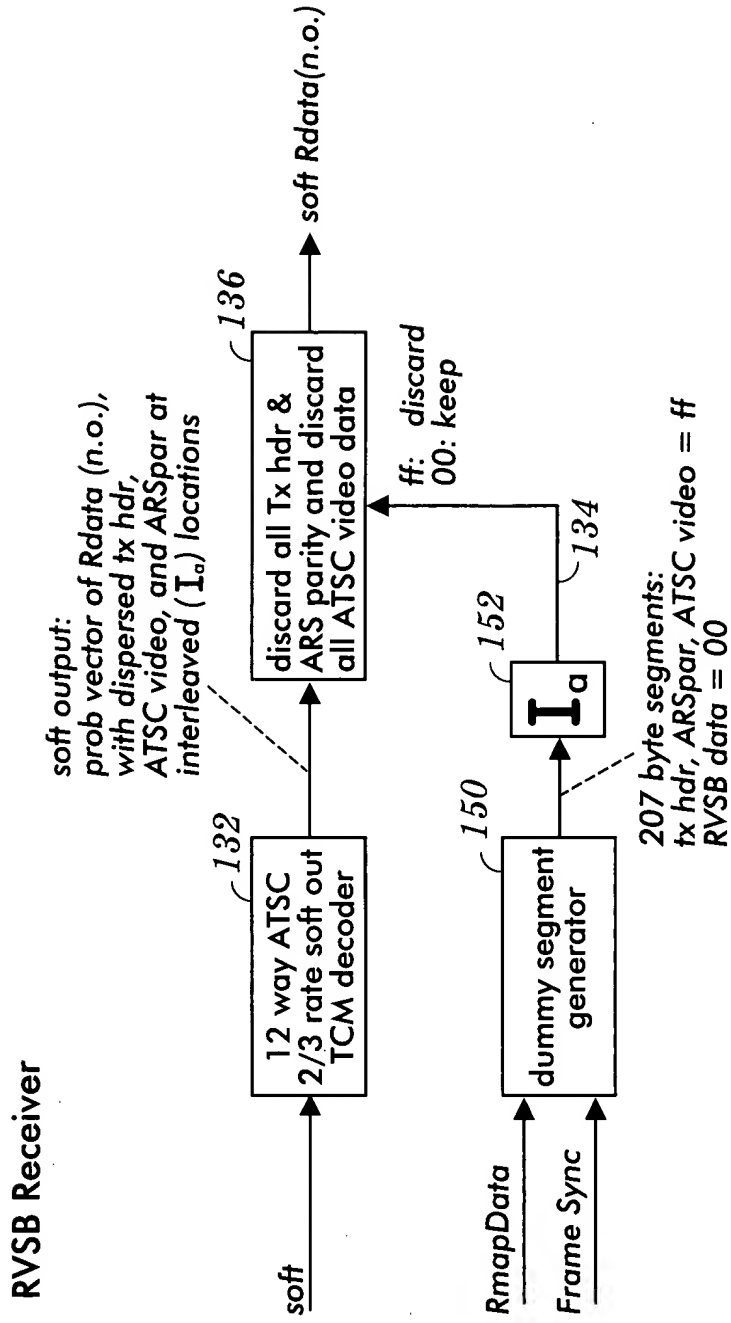


Figure 10

RVSb Transmitter

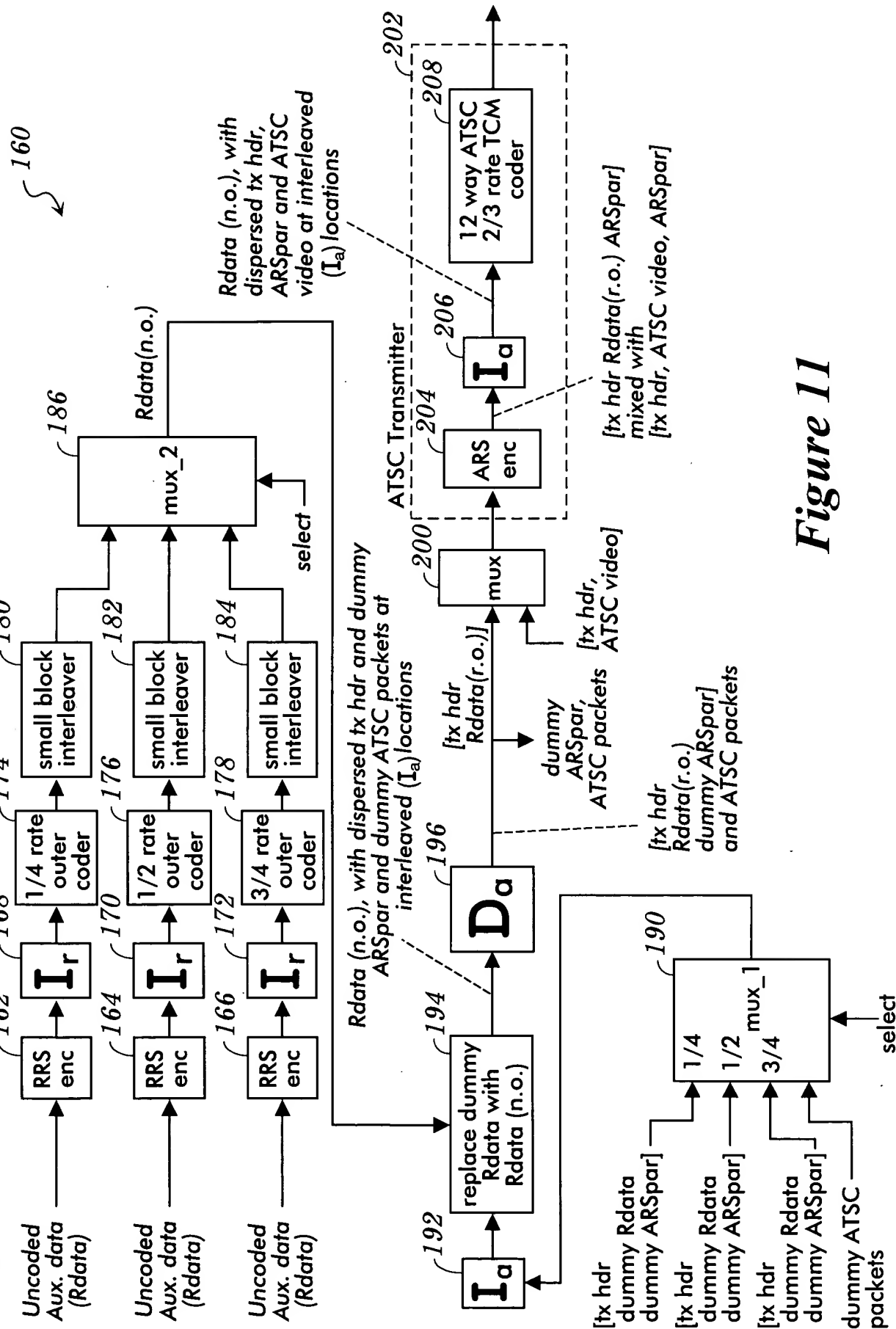


Figure 11

for 1/2 rate outer code

| | | | |
|-----------------------------|---|--------------------------------------|----------------------------|
| ATSC tx hdr (12 symbols) | RVSB data (736 symbols) 92 bytes payload | | ARS parity (80 symbols) |
| ATSC tx hdr (12 symbols) | RVSB data (576 symbols) 72 bytes payload | RRS parity (160 symbols) 20 bytes | ARS parity (80 symbols) |
| ATSC tx hdr (12 symbols) | RVSB data (736 symbols) 92 bytes payload | | ARS parity (80 symbols) |
| ATSC tx hdr (12 symbols) | RVSB data (576 symbols) 72 bytes payload | RRS parity (160 symbols) 20 bytes | ARS parity (80 symbols) |

2 bits/symbol 1 bit/symbol 2 bits/symbol

Figure 12

for 1/4 rate outer code

| | | | |
|-----------------------------|---|--------------------------------------|----------------------------|
| ATSC tx hdr (12 symbols) | RVSB data (736 symbols) 46 bytes payload | | ARS parity (80 symbols) |
| ATSC tx hdr (12 symbols) | RVSB data (736 symbols) 46 bytes payload | | ARS parity (80 symbols) |
| ATSC tx hdr (12 symbols) | RVSB data (736 symbols) 46 bytes payload | | ARS parity (80 symbols) |
| ATSC tx hdr (12 symbols) | RVSB data (416 symbols) 26 bytes payload | RRS parity (320 symbols) 20 bytes | ARS parity (80 symbols) |

2 bits/symbol 0.5 bit/symbol 2 bits/symbol

Figure 13

for 3/4 rate outer code

| | | | |
|-----------------------------|--|---|--|
| ATSC tx hdr (12 symbols) | RVSB data (736 symbols) 138 bytes payload | | ARS parity (80 symbols) |
| ATSC tx hdr (12 symbols) | RVSB data (736 symbols) 26 bytes payload | 20 bytes RRS parity | 92 bytes payload ARS parity (80 symbols) |
| ATSC tx hdr (12 symbols) | RVSB data (736 symbols) 72 bytes payload | 20 bytes RRS parity | 46 bytes payload ARS parity (80 symbols) |
| ATSC tx hdr (12 symbols) | RVSB data (736 symbols) 118 bytes payload | 20 bytes RRS parity ARS parity (80 symbols) | |

2 bits/symbol 1.5 bit/symbol 2 bits/symbol

Figure 14

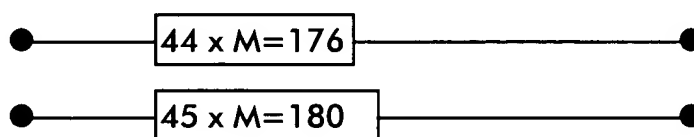
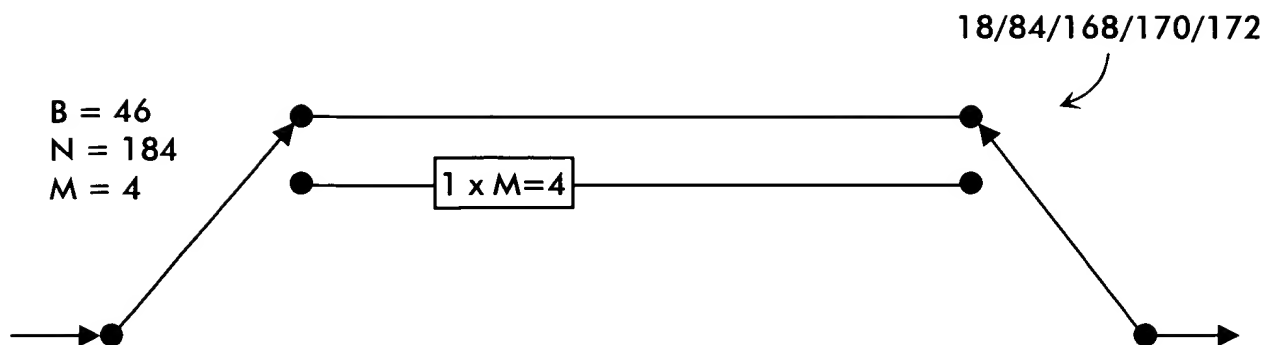


Figure 15

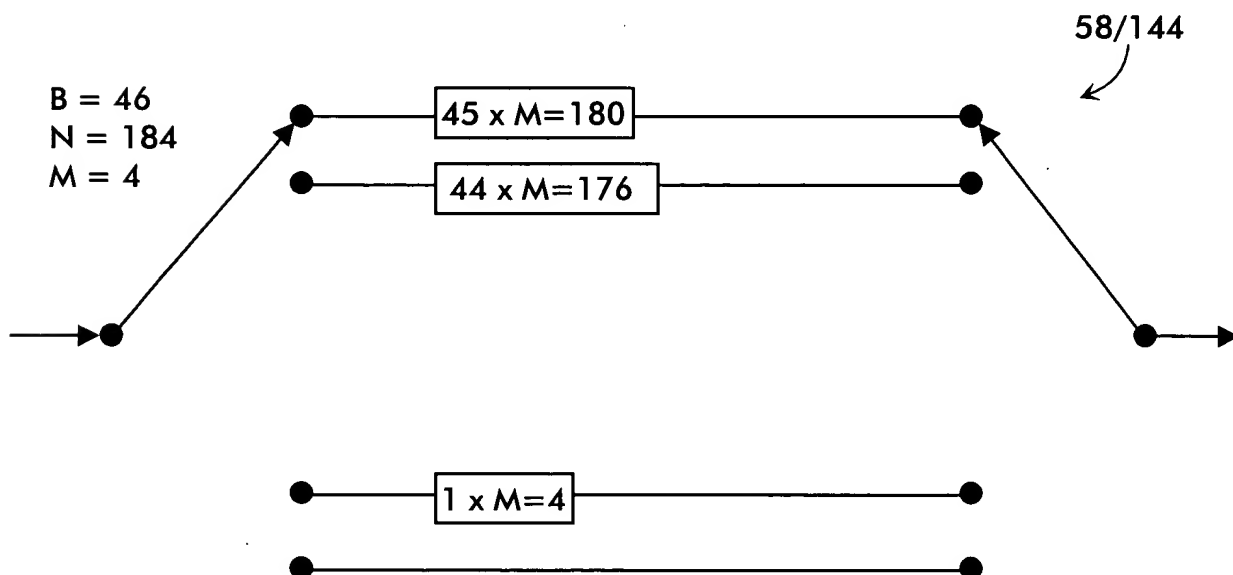


Figure 16

First RVSB RS block of field

| | |
|-------------------------|-----------|
| RVSB map data (24 bits) | 1288 bits |
|-------------------------|-----------|

Figure 17

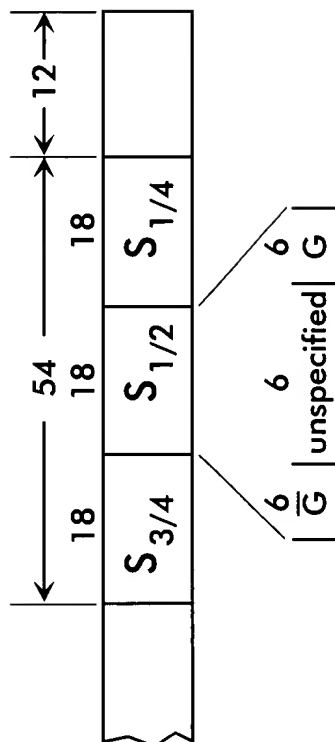
[illegible]

Figure 18

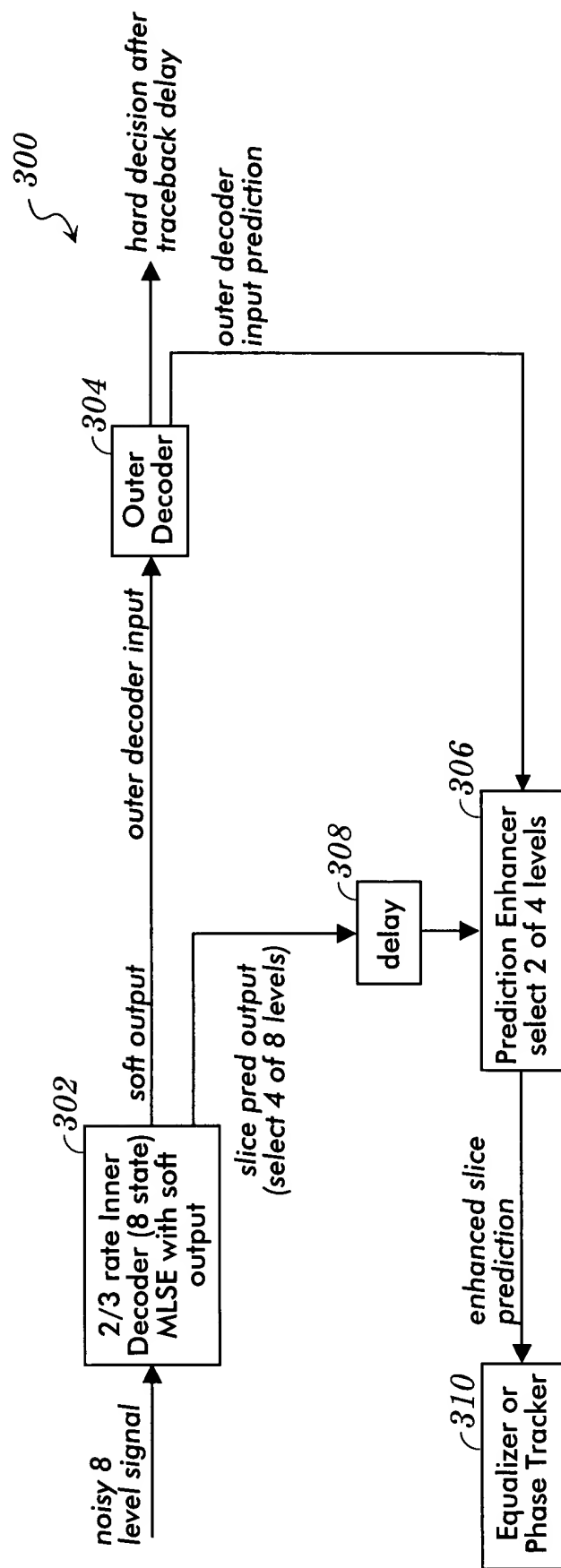


Figure 19

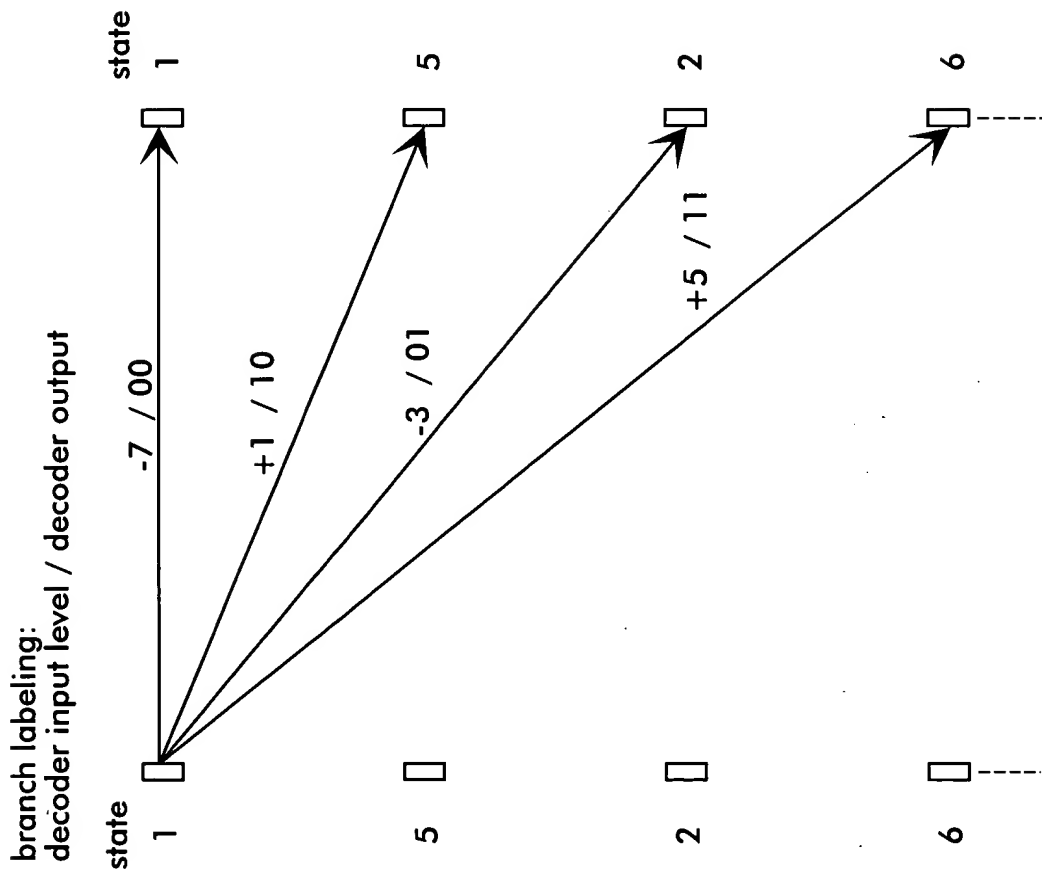


Figure 20

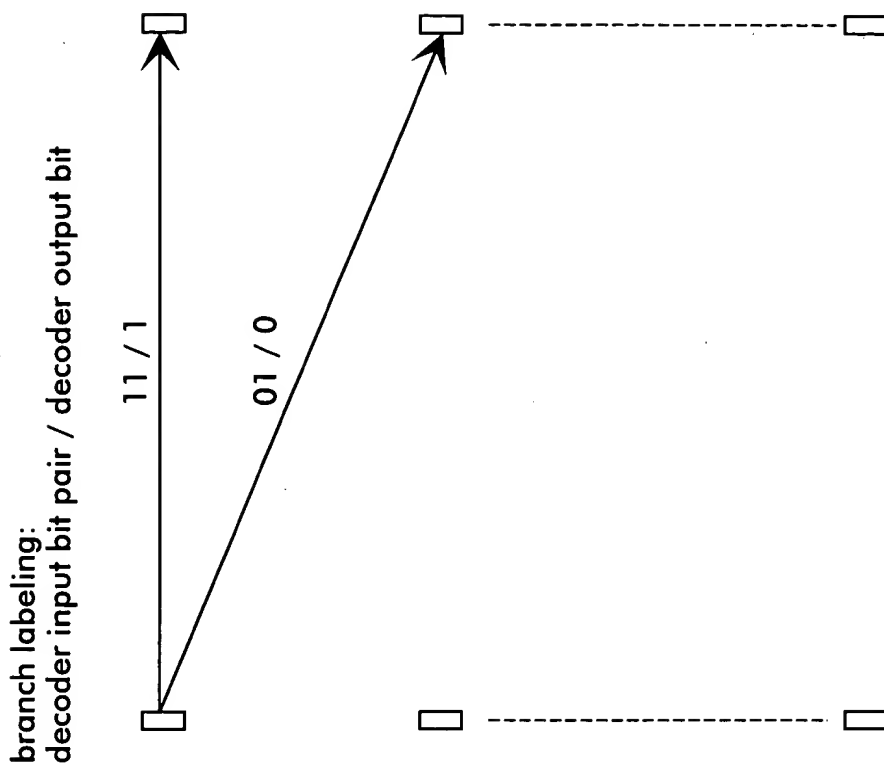


Figure 21

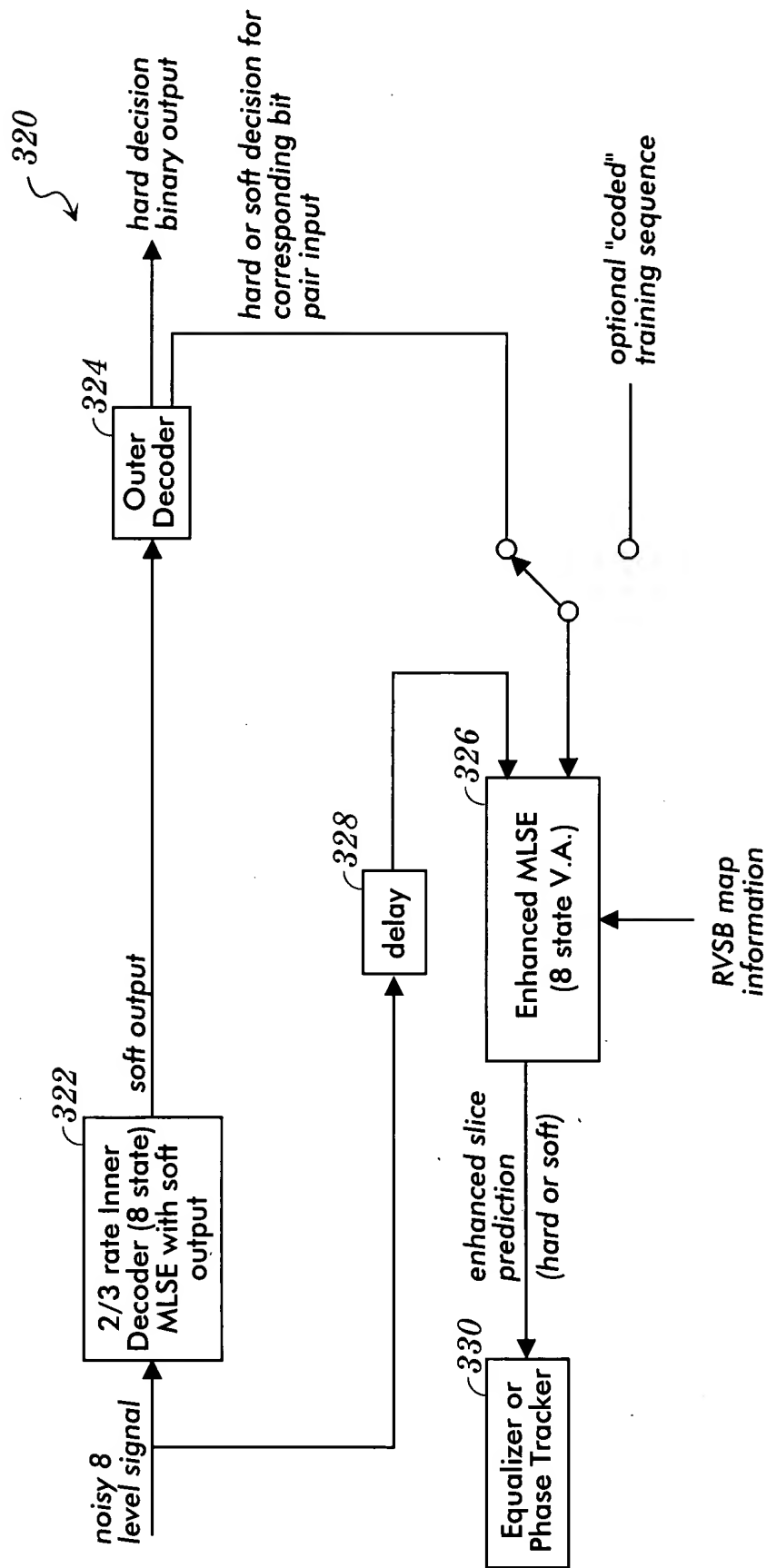


Figure 22